

In the Claims

Please amend the claims as follows:

1. (CURRENTLY AMENDED) A method of detecting microorganisms in a sample by means of a detectable nucleic acid probe comprising the following steps:
 - a) fixing the microorganisms contained in the sample;
 - b) incubating the fixed microorganisms with the detectable nucleic acid probe molecules;
 - c) removing nonhybridized nucleic acid probe ~~molecules~~;
 - d) separating hybridized nucleic acid probe ~~molecules~~ without using formamide and
 - e) detecting the separated nucleic acid probe.
2. (ORIGINAL) A method according to Claim 1, wherein the separated nucleic acid probe molecules in step e) are also quantified.
3. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the separation solution used in step d) is selected from the group consisting of water, buffered water, DMSO and SSC.
4. (ORIGINAL) A method according to Claim 3, wherein the separation solution is 0.001 - 1.0 M Tris/HCl, pH 9.0 +/- 2.0.
5. (PREVIOUSLY AMENDED) A method according to Claim 3, wherein the separation solution is 0.01 M Tris/HCl, pH 9.0 +/- 2.0.
6. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein step d) is carried out at a temperature of 50 to 100 °C.

7. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein step d) is carried out at a temperature lower than 100 °C.
8. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein step d) is carried out at a temperature of approximately 80 °C.
9. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the nucleic acid probe is complementary to a chromosomal or episomal DNA, an mRNA or rRNA of a microorganism to be detected.
10. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the nucleic acid probe is covalently bonded to a detectable marker.
11. (ORIGINAL) A method according to Claim 10, wherein the detectable marker is selected from the group of the following markers:
 - a) fluorescence markers,
 - b) chemoluminescence markers,
 - c) radioactive markers,
 - d) enzymatically active group,
 - e) haptene,
 - f) nucleic acid detectable by hybridization.
12. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the microorganism is a single-cell microorganism.
13. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the microorganism is a yeast, a bacterium, an alga or a fungus.
14. (ORIGINAL) A method according to Claim 13, wherein the microorganism belongs to

the genus *Salmonella*.

15. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is an environmental sample taken from water, soil or air.
16. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is a food sample.
17. (ORIGINAL) A method according to Claim 16, wherein the sample is taken from milk or milk products, drinking water, beverage, baked products or meat products.
18. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is a medicinal sample.
19. (ORIGINAL) A method according to Claim 18, wherein the sample is taken from tissue, secretions or fecal matter.
20. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is taken from wastewater.
21. (ORIGINAL) A method according to Claim 20, wherein the sample is taken from activated sludge, putrefactive sludge or anaerobic sludge.
22. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is taken from a biofilm.
23. (ORIGINAL) A method according to Claim 22, wherein the biofilm is taken from an industrial plant, is formed in purification of wastewater or is a naturally occurring biofilm.

24. (PREVIOUSLY AMENDED) A method according to Claim 1, wherein the sample is taken from a pharmaceutical or cosmetic product.

25. (CURRENTLY AMENDED) A kit for carrying out the method according to Claim 1, containing comprising:

- a) at least one hybridization buffer,
- b) at least one detectable nucleic acid probe for specific detection of a

microorganism, and

- ~~b1) — for specific detection of a microorganism,~~
- ~~b2) c) at least one detectable nucleic acid probe~~ for performing a negative control.

26. (CURRENTLY AMENDED) A kit according to Claim 25, containing comprising at least one specific probe for detection of bacteria of the genus Salmonella.

27. (CURRENTLY AMENDED) A kit according to Claim 26, containing comprising the nucleic acid probes

Salm63: 5'-TCGACTGACTTCAGCTCC-3'

and

NonSalm: 5'-GCTAACTACTTCTGGAGC-3'

or a nucleic acid probe that differs from Salm 63 and/or NonSalm by a deletion and/or an addition, whereby the ability of this probe to hybridize with Salmonella-specific nucleic acid is maintained, or a nucleic acid that can hybridize with the aforementioned nucleic acids.